LM388X Frequently Asked Questions and Answers

1. **What is the minimum C_{adj} for LM3881?**

   A: The minimum C_{adj} is 200pF.

2. **If the glitch is occurred at EN pin, does it impact the FLAG output?**

   A: EN pin has a glitch free operation. The first timer will start counting at a rising threshold of EN, but will always reset if the EN pin is de-asserted before the first output FLAG is released. Please refer section 7.3.1 of
   http://www.ti.com/lit/ds/symlink/lm3880.pdf

   if the EN pulse width is less than the delay time, the FLAG does not response.
   The EN pulse should stay active during whole power-up sequence. If the EN is de-asserted before the power-up sequence is completed, the device enters a controlled shutdown. Please refer 7.3.2 of http://www.ti.com/lit/ds/symlink/lm3880.pdf
   Here is an example of the EN glitch function. Yellow is EN signal and Pink is FLAG 1 and green is FLAG 3. The glitch of the EN does not cause the shutdown of the Flag outputs.
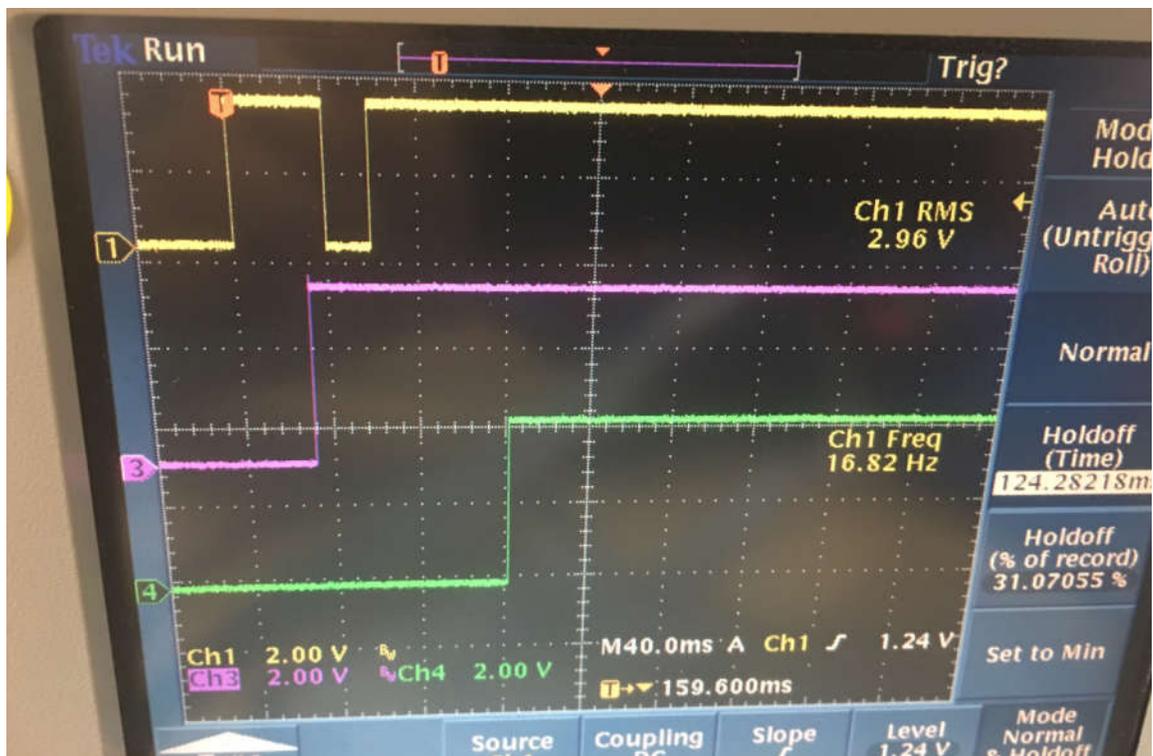
3. **What's the test condition for the question current?**
   A: The test condition is that VCC=3.3V and EN = 3.3V. So it is an operating current when EN is high.

4. **Is it a good practice to connect EN pin to VCC?**
   A: Connecting the EN pin to VCC is not recommended. During power up, the EN voltage should be kept below the EN threshold until VCC rise above the minimum operating voltage. An undefined operation at the FLAG outputs can occur if EN is connected to VCC.

5. **If EN signal stays assertion, what're the behaviors of FLAG outputs when VCC ramp down below its minimum operating voltage?**
   A: The behaviors of the device are unpredictable if EN is asserted before VCC ramp down its minimum operating voltage. .

6. **Does LM388x have a chance to enable the external power rail during its initialization?**
   A: As show in the data sheet V_{FLAG} vs V_{IN} (VCC), the FLAG voltage will be pulled low when VCC exceeds about 0.8V. The FLAG voltage reaches about 0.65v before true pulldown begins. The external power rail shall not be on if its enable threshold is above 0.65V.

7. **What is the FLAG output of the LM388x if there is no voltage applied to VCC/VIN?**
   A. The output will be high impedances. Figure 10(LM3880) and Figure 6(LM3881) of data sheet shows FLAG following VCC.

8. **What does device behave if the EN toggles in the 120ms delay during incomplete power or down?**
   A: The EN assertion or de-assertion is not accepted at between 120ms period. See below waveforms. Yellow is EN signal, Green is Flag1 and Pink is FLAG3. A glitch of EN during the 120ms also does not reset the 120ms and is not accepted for the sequencing.